REMARKS

Claims 1-3, 5-11 and 14-17, and 19-22 are pending in the application. Claims 1 and 10have been amended, and claims 4, 12-13, 18, and 23 have been cancelled. No new matter has been introduced by the amendment.

REJECTION UNDER 35 U.S.C. §103(a)

Claims 1-3 and 5-23 have been rejected over De in view of Buchwalter et al. and Hiyamizu et al. This rejection is overcome in view of the amendment of claims 1 and 10 together with the following remarks.

Claim 1 has been amended to introduce the limitations of dependent claim 18 and claim 10 has been amended to introduce the limitations of dependent claim 23.

Claim 1, as amended, recites a process in which a workpiece is temporarily attached to a porous work carrier by a liquefied adhesive that is drawn into the plurality of pores of the work carrier by applied vacuum pressure. A portion of the plurality of pores include pore passages that comprise at least 10% of the pore volume, and wherein the pore passages traverse the work carrier from a top side to a rear side of the work carrier. The adhesive is then hardened, while maintaining the vacuum pressure. Following processing of the workpiece, the workpiece is released from the work carrier by action of a solvent.

A work carrier arranged in accordance with the invention is recited in claim 10. The applicants have amended claim 10 to recite the particular structural features of the invention that relate to the changing state of the adhesive. Specifically, the pores are configured to accommodate a portion of the liquefied

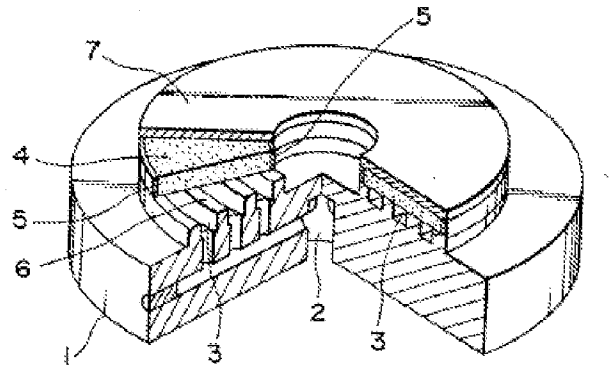
adhesive and have a workpiece in intimate contact therewith. Notably, the pores are also configured to accommodate the liquefied adhesive upon hardening of the adhesive to a solid. A portion of the plurality of pores include pore passages that comprise at least 10% of the pore volume, and wherein the pore passages traverse the work carrier from a top side to a rear side of the work carrier.

None of the cited references disclose the claimed process or structure, taken alone or in combination. Despite the failure of the references to disclose the claimed porous work carrier, in the Office Action of August 23, 2007, the Examiner asserts that Hiyamizu teaches that porosity and pore size of a vacuum carrier are result effective variables for adhesive infiltration. (Office Action, pg. 4).

Hiyamizu et al. do not disclose the interconnected pore network and the pore passages that function to accommodate a liquid adhesive, which solidifies to temporarily hold a workpiece, as recited by the present claims. Instead, Hiymaizu et al. disclose a structure that includes a porous body permanently bonded to a metal chuck. In particular, Hiymaizu et al. state:

> "As is shown in this figure [2], the annular suction head 4 is made of a porous body which is prepared by sintering fine particles of a thermoplastic resin and the inner and outer peripheral surfaces thereof are provided with air-impermeable layers 5,5. The suction head 4 is mounted on and adhesively bonded to the upper surface 6 of a metal-made chuck base 1." (Col. 2, ll. 32-39).

FIG. 2



The suction head (4) is a permanently bonded to the base (1) of the vacuum chuck. Hiymaizu et al. do not suggest or disclose a porous work carrier configured to temporarily hold a workpiece with an adhesive. Instead, Hiymaizu et al. disclose how to bond a porous plastic body to a metal.

> " ... it is a problem common in an article shaped of a thermoplastic resin having good water resistance and oil resistance that a difficulty is usually encountered in adhesively bonding such a plastic-made article having poor adhesive receptivity, for example, to the surface of a metal-made body as in the adhesive bonding of the plastic-made suction head 8 to the metal-made chuck base 1 illustrated in FIG. 1. In contrast thereto, a porous body of a thermoplastic resin having open pores is fully receptive of an adhesive because of the anchoring effect exhibited by the adhesive infiltrating into the open pores of the sintered plastic body. The depth of infiltration of the adhesive into the pores can be controlled by adequately selecting various parameters including the type and viscosity of the adhesive, type of the thermoplastic resin and porosity and pore diameter of the sintered body." (Col. 3, ll. 14-30).

The applicants assert that event though Hiymaizu et al. discloses particular pore characteristics of the suction head (4), these characteristics are directed to the porosity needed to permit the suction head to transmit vacuum pressure to the workpiece (7). This is different from the pore characteristics

needed to accommodate a liquid adhesive, which drawn into the pores, solidified, then dissolved by action of a solvent to release the workcarrier.

De fails to suggest or disclose a work carrier that includes a plurality of pores at least a portion of which are interconnected, as acknowledged on page 2 of the Instant Office Action. Further, De fails to suggest or disclose pores that are configured to accommodate a portion of a liquefied solid upon application of vacuum pressure to the work carrier.

Buchwalter et al. disclose a process in which a photoresist layer (402) is formed over chiplets (220) on a substrate (200). (Paragraph [0050]). The chiplets reside on an insulator that overlies a parting layer (306). A porous transfer plate (404) is brought into contact with an photoresist layer (202) and a etch process is carried out to etch the parting layer (306), thus releasing chiplet substrate. (FIGs. 9 and 10). Although Buchwalter et al. disclose the transport of vapor phase etch gasses through a porous transfer plate (404), the parting layer (306) that is etched by the etch gasses to release the chiplet substrate is not located directly against the transfer plate (404). The chipets are pulled off the transfer plate by force. (Paragraph [0055]).

Thus, Buchwalter et al., De and Hiymaizu et al. do not suggest or disclose a process in which a workpiece is temporarily attached to a porous work carrier by a liquefied adhesive that is drawn into the plurality of pores of the work carrier by applied vacuum pressure. A portion of the plurality of pores include pore passages that comprise at least 10% of the pore volume, and wherein the pore passages traverse the work carrier from a top side to a rear side of the work

carrier. The adhesive is then hardened, while maintaining the vacuum pressure. Following processing of the workpiece, the workpiece is released from the work carrier by action of a solvent. In view of the failure of the cited references to suggest or disclose the claimed porous work carrier, together with the structural differences in the apparatus disclosed by Buchwalter et al. and Hiyamizu et al., a *prima facie* case of obviousness is not established.

Claims 2-3, 5-9, 14-17, and 19- 21 are allowable in view the amendment and remarks pertaining to claim 1 from which they depend.

Claims 11 and 22 are allowable in view the amendment and remarks pertaining to claim 1 from which they depend.

The rejection of claims 18 and 23 is now moot in view of the cancellation of these claims.

The applicants have made a novel and non-obvious contribution to the art of semiconductor fabrication technology and handling equipment. The claims at issue distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,

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